

Application No.10/715,243  
Letter of Response dated  
Reply to Office Action of 01/13/2005

REMARKS

Favorable reconsideration of this application is respectfully requested.

Claims 1-20 are pending in this case. Of these claims, claims 16-20 have been withdrawn from consideration.

Claims 1 and 6-13 are rejected under 35 U.S.C. § 103(a) as obvious over Underwood (U.S. Pat. 5,816,535) in view of Kenzie (U.S. Pat. 4,513,931).

Claims 2-5 are objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 14 and 15 are allowed.

This rejection of claims 1 -13 as obvious over Underwood in view of Kenzie is traversed for the following reasons.

Applicants' invention as recited in claim 1 is directed to a device for severing an extraction line connected between a cargo load and an extraction parachute when the cargo load fails to eject from an aircraft. The device 23 comprises a cutter 27 spaced from and spring-biased in the direction of the extraction line 25, and a housing for the cutter. In addition, the device includes means for mechanically restricting the cutter from engaging and severing the extraction line, and means responsive to a radio signal from a transmitter on the aircraft for disabling the restricting means so that the cutter is released and severs the extraction line. Claims 6-13 further define the device.

The invention has unexpected properties and advantages as compared to the closest prior art. On command, the cargo handler can activate the device from any

location on the aircraft and jettison the extraction parachute. No pyrotechnics are involved, so there are no restrictions imposed by the use of explosives. There are no cables to come loose and entangle with the airdrop loads or the cargo handler's feet. One low power coded EMI shielded transmitter may be used on all aircraft without risk to other aircraft flying nearby. The aircraft can carry multiple transmitters. Evidence of unexpected results is strong support for a conclusion of non-obviousness.

The primary reference, Underwood, discloses a system for releasing a cargo extraction parachute if the cargo attached to the parachute becomes jammed within the cargo compartment. (Col.1, lines 6-9.) The extraction parachute 32A includes an attachment line 34A that is releasably connected to an extraction force transfer coupling 36A. (Col.4, lines 29-32.) The end of the attachment line 34A is in the form of a loop 44 that is wrapped about a pin 38. (Col.4, lines 39-41.) An electrically initiated explosively actuated line cutter 62 is mounted on the coupling 36A positioned such that, when actuated, its cutter 64 severs the looped end of the attachment line 28 freeing the extraction parachute 32A. (Col. 4, lines 55-58.)

The primary reference, taken alone, does not teach the invention recited in the claims. Respecting base claim 1, for example, Underwood does not teach a spring-biased line cutter, and means responsive to a radio signal from a transmitter on an aircraft for disabling a means which restricts the cutter from severing the extraction line. Underwood shows a construction having the very feature applicants seek to avoid----an electrically initiated-explosively actuated line cutter.

The secondary reference, Kenzie, discloses a device for severing a reefing line. A reefing line is a line that passes through rings spaced around the periphery of the canopy

of an extraction parachute and which restricts the opening of the canopy because its length is less than the circumference of the canopy. (Col.1, lines 15-20.) The dereefing cutter includes a knife 48 which is held in a preloaded position by a latch mechanism 68. The latch mechanism 68 includes a detent which is held in place by a timing mechanism 112. Upon partial opening of the canopy, the timing mechanism 112 is actuated, and after a predetermined delay, releases the detent, and the knife 48 is urged by a preloaded spring 60 to cut the reefing line 20.

The Examiner takes the view that Kenzie teaches that a device to restrict a cutter from cutting a line is well known in the art, and therefore Kenzie would make it obvious to modify the Underwood system in such fashion as to arrive at applicants' construction. To do this, however, it is first necessary to modify Kenzie before it is employed to modify Underwood. As pointed out above, the claim feature relied on involves making the device to restrict the cutter from cutting a line responsive to a radio signal from a transmitter on the aircraft, and this is something that Kenzie does not do.

Since Kenzie fails to disclose this distinguishing feature of base claim 1, it could not suggest modifying the Underwood system to contain that feature. The Examiner finds the suggestion only after first making a modification in the secondary reference that is not suggested by anything other than applicant's disclosure. Instead of basing his legal conclusions on the facts of record as he is required to do, the Examiner states that remote control means are well known and that, therefore, the skilled artisan would have used such means to control the cutting of the extraction line.

Kenzie is a reference only for what it clearly discloses or suggests and such modification of Kenzie as has been attempted is not a proper use of this patent as a

reference. Kenzie does not disclose or suggest a structure modified in accordance with the Examiner's reasoning. Kenzie teaches away from this modification. If Kenzie were so modified, it would be rendered inoperable for its intended purpose. Operation of the detent that disables the dereefing cutter would no longer be controlled by a simple mechanical timer. It would depend upon a human operator sending a radio signal at the right time and be subject to human error. If the parachute canopy were allowed to develop to its full flying diameter immediately upon dispatch from the aircraft, the shock loads imposed on the canopy would cause it to break up. (Kenzie, Column 1, lines 9-13.)

This is a hindsight reconstruction. It does not establish obviousness. Applicants do not see that the references, without the benefit of their disclosure, fairly suggest this combination in the airborne cargo jettison art.

Therefore, the rejection of claims 1-13 under 35 U.S.C. § 103(a) as obvious over Underwood in view of Kenzie cannot stand.

The prior art made of record and not relied on has also been thoroughly reviewed and is not seen as providing any teachings, singly or in combination, to negate patentability of the claimed structure.

In conclusion, claims 1-13 are deemed allowable. Claims 14-15 have already been allowed. Since no other issues are presented for consideration, allowance of this application and early notice of allowability is respectfully requested.

Respectfully submitted,

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